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10/608,724	06/26/2003	Andreas Gustafsson	PA2271US	6930
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/608,724

Applicant(s)

GUSTAFSSON, ANDREAS

Examiner

Hetul Patel

Art Unit

2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is in response to the communication filed on April 05, 2007.
Claim 43 is newly added. Therefore, claims 1-43 are currently pending in the application.
2. Applicant's arguments filed on April 05, 2007 have been fully considered but they are not deemed to be persuasive.
3. The rejection of claims 1-42 as in the previous Office Action is respectfully maintained and reiterated below for Applicant's convenience.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-9 and 11-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher et al. (USPN: 2002/0178238) hereinafter, Fletcher in view of Vishin et al. (USPN: 5,860,146) hereinafter, Vishin.

As per claim 1, Fletcher teaches a caching server comprising an answer cache (i.e. the cache which stores the address information that is local within the terminal) configured to access answer information (i.e. the address information); a referral cache (i.e. the cache which stores referral information to forward the query to the remote terminal's answer cache across the communication network) configured to store referral

Art Unit: 2186

information (i.e. the referral information); and computer instructions configured to translate a domain name into DNS information by examining the answer cache and, responsive to the results of examining the answer cache, examining the referral cache (e.g. see paragraph [0008]).

However, Fletcher does not clarify that the answer cache stored answer information in a flat data structure. Vishin, on the other hand, teaches a computer system which includes a translation lookaside buffer (TLB) (i.e. 122 in Fig. 5), similar to claimed answer cache, for storing the address information for the local page table entries; and a remote translation lookaside buffer (RTLb) (i.e. 160 in Fig. 5), similar to claimed referral cache, for storing the address information for the remote page table entries (e.g. see the abstract and Fig. 5). By using the hash table (i.e. the flat data structure) in answer cache as taught by Vishin, it reduces the number of memory accesses and as a result of that, it is faster than the lookup in the tree structure. Accordingly, it would have been obvious to one ordinary skilled in the art at the time of the current invention was made to implement the flat data structure in the answer cache to achieve the benefits described above.

As per claims 11, 13, 17, 26, 34 and 38-39, see arguments with respect to the rejection of claim 1. Claims 11, 13, 17, 26, 34 and 38-39 are also rejected based on the same rationale as the rejection of claim 1.

As per claim 2, the combination of Fletcher and Vishin teaches the claimed invention as described above and furthermore, Vishin teaches that the flat data structure is a hash table (i.e. 122 in Fig. 5) (e.g. see the abstract and Fig. 5).

As per claims 25, 29 and 35, see arguments with respect to the rejection of claim 2. Claims 25, 29 and 35 are also rejected based on the same rationale as the rejection of claim 2.

As per claim 19, see arguments with respect to the rejection of claims 1 and 2. Claim 19 is also rejected based on the same rationale as the rejection of claims 1 and 2.

As per claim 3, the combination of Fletcher and Vishin teaches the claimed invention as described above and furthermore, Fletcher teaches that when the requested address information is not found at the terminal, the query from the local host is forwarded to the communication network (i.e. to the remote hosts) which stores the requested information (e.g. see paragraph [0008]). Therefore, the pointer/link has to be inherently stored/present in the local terminal cache that points to the remote hosts for the requested information. Fletcher teaches the further limitation of pointers pointing to a tree data structure (e.g. see paragraph [0005]).

As per claims 5, 20-23 and 27-28, see arguments with respect to the rejection of claim 3. Claims 5, 20-23 and 27-28 are also rejected based on the same rationale as the rejection of claim 3.

As per claim 4, the combination of Fletcher and Vishin teaches the claimed invention as described above and furthermore, Fletcher teaches that the tree data structure (i.e. the hierarchical structure) is configured to store answer information and referral information (e.g. see paragraphs [0005]-[0006]).

As per claim 6, the combination of Fletcher and Vishin teaches the claimed invention as described above and furthermore, Fletcher teaches that the caching server

Art Unit: 2186

(i.e. the name server, 101 in Fig. 1) is also an authoritative server, i.e. a server which has the desired information (e.g. see Fig. 1).

As per claim 7, the combination of Fletcher and Vishin teaches the claimed invention as described above and furthermore, Fletcher teaches that the caching server (i.e. the name server, 101 in Fig. 1) is also a web server, i.e. the DNS server (e.g. see Fig. 1).

As per claim 8, the combination of Fletcher and Vishin teaches the claimed invention as described above and furthermore, Fletcher teaches that the referral cache is further configured to store the referral information in a hierarchical data structure (e.g. see paragraphs [0005]-[0006]).

As per claims 31 and 41, see arguments with respect to the rejection of claim 8. Claims 31 and 41 are also rejected based on the same rationale as the rejection of claim 8.

As per claim 9, the combination of Fletcher and Vishin teaches the claimed invention as described above and furthermore, Fletcher teaches that the DNS information includes an IP address (e.g. see paragraphs [0005]).

As per claims 12, 16, 18, 24, 32 and 42, see arguments with respect to the rejection of claim 9. Claims 12, 16, 18, 24, 32 and 42 are also rejected based on the same rationale as the rejection of claim 9.

As per claims 14 and 15, the combination of Fletcher and Vishin teaches the claimed invention as described above and furthermore, Fletcher teaches means for storing data in the first cache such that a time required to examine the first cache is

Art Unit: 2186

essentially constant as a function of a number of labels comprising the domain name, i.e. the first cache is the local cache, which uses the flat data structure and since the number of cache entries to search in this flat data structure local cache is fixed/constant all the time, a time required to examine the first/local cache is essentially constant as a function of (i) a number of labels comprising the domain name and (ii) a size of the first/local cache (e.g. see paragraph [0008]).

As per claim 30, see arguments with respect to the rejection of claims 14 and 15. Claim 30 is also rejected based on the same rationale as the rejection of claims 14 and 15.

As per claims 33 and 36, the combination of Fletcher and Vishin teaches the claimed invention as described above and furthermore, Fletcher teaches the method of storing data in a cache, the method comprising: requesting DNS information; receiving data in response to the request; classifying the response received; and storing the data received in either a referral cache or an answer cache based on the classification (e.g. see paragraphs [0005] and [0008]).

As per claim 37, the combination of Fletcher and Vishin teaches the claimed invention as described above and furthermore, Fletcher teaches that the DNS information includes a numerical address, i.e. the IP address (e.g. see paragraph [0005]).

As per claim 40, see arguments with respect to the rejection of claims 1 and 33. Claim 40 is also rejected based on the same rationale as the rejection of claims 1 and 33.

As per claim 43, the combination of Fletcher and Vishin teaches the claimed invention as described above, but none of them clearly disclose that the referral cache is separate from the answer cache. However, having multiple caches in a system/server is well-known and notorious old in the art. For example, the processor performance increases by having a separate instruction and data cache in a processor. Similarly, it would have been obvious to one of ordinary skills in the art at the time of the current invention was made to keep the answer and referral cache separate to achieve the higher performance of the server.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher in view of Vishin, further in view of Ramanathan et al. (USPN: 6,182,136).

As per claim 10, the combination of Fletcher and Vishin teaches the claimed invention as described above but does not clearly teach that the DNS information includes a Mx record. Ramanathan et al., on the other hand, teaches that by including the Mx (the mail exchange) record in the DNS information, the email messages can be easily exchanged across the hosts/web using the Mx record (e.g. see Col. 6, lines 25-41). Accordingly, it would have been obvious to one of ordinary skill in the art at the

Art Unit: 2186

time of the current invention was made to modify the caching server taught by the combination of Fletcher and Vishin by including the Mx record in the DNS information as taught by Ramanathan so the email messages can be easily exchanged across the hosts/web. Therefore, it is being advantageous.

Remarks

6. As to the remark, Applicant asserted that
- (a) The RTL 160 of Vishin does not teach the "answer cache" of claim 1 and, as such, even in combination the cited art does not teach all of the limitations of claim 1.
 - (b) The combination suggested by the Examiner does not have a reasonable expectation of success, as required for a rejection under 103(a).
 - (c) In combining the teachings of Fletcher and Vishin, the Examiner appears to be doing more than merely combining elements.
 - (d) The motivation to combine the cited art that is suggested by the Examiner does not meet the requirements of 103(a).
 - (e) The Examiner does not provide any evidence that the suggested motivation would be known to one of ordinary skill in the art at the time of the invention.
 - (f) The rejection under 103(a) is improper because the cited references are in substantially different fields of art, and as such one of ordinary skill in the art of invention would not look to combine the features of Vishin with those of Fletcher.

Examiner respectfully traverses Applicant's remark for the following reasons:

With respect to (a), as described in the rejection of claim 1 above, Fletcher teaches all limitations of claim 1 except for the clarification that the answer cache stored answer information in a flat data structure. Vishin, however, does teach that the RTL160 is buffer which stores (address) information in flat data structure as claimed in claim 1. Therefore, the combination of both Fletcher and Vishin does teach all limitations of claim 1.

With respect to (b), Fletcher does teach that computer instructions configured to translate a domain name into DNS information by examining the answer cache (e.g. see paragraphs [0005] and [0008]).

With respect to (c)-(e), In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation for the rejection is found in the knowledge generally available to one of ordinary skill in the art.

With respect to (e), In response to applicant's argument that the cited references are nonanalogous arts, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular

Art Unit: 2186

problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the Fletcher prior art is about caching the address information in the communication system, i.e. it is in the same field of art as the current invention. The Vishin prior art discloses about translating address information and therefore, can be used in the Fletcher prior art to translate and store the address information in the flat data structure as suggested by Vishin.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hetul Patel whose telephone number is 571-272-4184. The examiner can normally be reached on 8:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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